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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,953	11/17/2003	Richard J. Pommer	30-4959 DIV2 - 4010	4463

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EXAMINER

COMPTON, ERIC B

ART UNIT	PAPER NUMBER
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3726

DATE MAILED: 05/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/715,953

Applicant(s)

POMMER, RICHARD J.

Examiner

Eric B. Compton

Art Unit

3726

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED-STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-22 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 14-22 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 14-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant notes "Methods and apparatus are provided which facilitate proper registration between layers when creating a laminated multi-layered device such and an integrated circuit (IC) interconnect. In particular, proper registration can be achieved by precisely dimensioning the alignment plate, selecting the materials of which the alignment plate is composed to have the same thermal coefficient of expansion (TCE) as the layers being laminated, and/or providing the alignment plate with pins sized to be equal to or larger the alignment/registration holes of the layers." Specification, pages 1-2.

Thus, the alignment plate is not envisioned to be part of the multilayered interconnect thus formed. Applicant's claims should reflect this distinction, as to claim for example the combination of the interconnect and alignment plate.

3. Claim 21 recites the limitation "the registration holes" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Art Unit: 3726

4. Claim 18, recites the limitation "further comprising at least one tooling pin ..."

However, this limitation was previously introduced in claim 21. Therefore, this limitation appears redundant.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 14, 16, and 18-22 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 05-218648 to NEC.

Regarding claim 21, NEC discloses a plate (4) having tooling pins (5) for stacking dielectric layers (1). See Fig. 2.

Claim 21, only claims an alignment plate having tooling pines. The limitation "the plurality of dielectric layers are stacked onto the alignment plate" is directed to the intended use of the alignment plate. A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). Furthermore, the limitation "with diameter larger than diameters of the registrations and having approximately a TCE that differ form the average TCE of a plurality of dielectric layers by less than 2 ppm/°C" is also directed to the intended use.

Regarding claim 18, in NEC the tooling pins are coupled to the alignment plate.

Regarding claim 19, in NEC the tooling pins having a conical tip.

Regarding claims 14, 16, 20 and 22, these limitations are also directed towards the intended use of the alignment plate.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over NEC in view of U.S. Pat. 4,883,219 to Anderson et al ("Anderson").

NEC discloses the invention cited above. However, the material the plate is formed is not known.

Anderson teaches an alignment plate having alignment pins for aligning dielectric plates. See Col. 10-11, lines 42-5. "The fixture 85 may have platens 84 and 86 of a material with the same or similar coefficient of thermal expansion as that of the components being joined. ... As the fixture and components heat, distortion is virtually eliminated because the platens 84 and 86 expand at the same rate as the components." *Id.*

Regarding claim 15 and 17, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have formed the plate of NEC from

Art Unit: 3726

a metal, e.g., copper, in light of the teachings of Anderson, in order to match the TCE of the alignment plate with that of the layers to prevent distortion due to thermal expansion. Note: the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

Allowable Subject Matter

9. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not teach or suggest: ***combination of the alignment plate and interconnect***, comprising an alignment plate having tooling pins, with each tooling pin having a diameter larger than the diameter of the corresponding registration holes in a plurality of dielectric layers of the interconnect, in combination with the other claimed subject matter.

Response to Arguments

10. Applicant's arguments filed February 15, 2005, have been fully considered but they are not fully persuasive.

Applicant's claims still suffer from the same problems pointed out in the previous office action (and above), namely Applicant's failure to claim the combination of the alignment plate and the dielectric layer. As noted above, intended use of a claimed apparatus alone does not differentiate the apparatus from a prior art apparatus satisfying all the structural limitations.

Applicant is recommended to claim the combination of the alignment plate and a interconnect comprising a plurality of dielectric layer.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

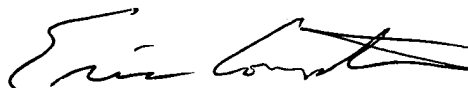
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B. Compton whose telephone number is (571) 272-4527. The examiner can normally be reached on M-F, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter D. Vo can be reached on (571) 272-4690. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Eric B. Compton
Primary Examiner
Art Unit 3726

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